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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Per Halvarsson

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EXAMINER

BAISA, JOSELITO SASIS

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,201	Applicant(s) HALVARSSON ET AL.	
	Examiner JOSELITO BAISA	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-23 and 25-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-23 and 25-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 19-24, 26, 29, 30, 31, 33, 34, 38-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kauferle et al. [3942100] in view of Breitenbach et al. [4785138] and

Kauferle et al. disclose an installation for transmission of electric power comprising two switchgear units; a high voltage ac voltage line extending between the switchgear units, the ac voltage line comprising at least one cable **f**; at least one inductor **b** located along the of the cable **f** between the switchgear units and integrated into the at least one extruded cable **f**, the at least one inductors **b** being connected between the conductor of the at least one extruded cable **f** and ground[Col. 2, Lines 23-35, Figure 1].

Kauferle et al. disclose the instant claimed invention above except for the high voltage line exceeding at least 10kv; the cable being an extruded cable with an inner electric conductor, an insulating layer of a solid material surrounding said conductor, and an outer screen layer located at ground potential; and a casing through which the cable is lead, the casing being located at ground potential and the at least one inductor being arranged in the casing, wherein a first end of the at least one inductor is connected to the electric conductor and a second end of the at least one inductor is connected to the casing.

Breitenbach et al. disclose an extruded cable **3** with an inner electric conductor **5**, an insulating layer **8** of a solid material surrounding conductor **5**, and an outer screen layer **10** located at ground potential [Col. 4, Lines 6-53, Figure 2].

It would have been obvious to one having ordinary skill in the art at the time of the invention to use extruded cable as taught by Breitenbach et al. to the electric power transmission system of Kauferle et al..

The motivation would have been to achieve an extruded cable that is very firmly attached to the conductor. This firm seat is beneficial in that the conductive layers together with the insulation layer are so firmly seated on the main conductor that displacement of this layers are impossible during mounting of fittings [Col. 2, Lines 21-27].

Goldstein discloses a casing 20 through which the cable is lead, the casing 20 being located at ground potential and the at least one inductor L1 being arranged in the casing, wherein a first end of the at least one inductor is connected to the electric conductor 26 and a second end of the at least one inductor L1 is connected to the casing 20 [Col. 7, Lines 35-45, Figures 1 and 5].

It would have been obvious to one having ordinary skill in the art at the time of the invention to use a casing through which a cable is lead, the casing being located at ground potential and the at least one inductor being arranged in the casing as taught by Goldstein to the structure of Kauferle in view of Breitenbach.

The motivation would have been to provide housing to reactive components of the transmission line for better grounding of the system [Col. 4, Lines 50-60].

With regards to the recitation of high voltage line exceeding 10kv, they cannot be relied upon to distinguish over the Kauferle in view of Breitenbach and Goldstein reference because they are seen as intended use (i.e., when the claim is directed to a device, any recitation concerning the input or output of such device or environment in which the device is employed is not part of the inventive circuit device). Only structural and functional limitations are given patentable weight.

Regarding claim 20, Kauferle discloses the switchgear units are located at large distances from each other [Col. 2, Lines 23-26].

Regarding claims 21, 22 and 23, Kauferle et al. disclose a plurality of inductors distributed uniformly along the line at considerable distances [Col. 2, Lines 23-40].

Regarding claim 24, Breitenbach discloses the cable is an extruded cable [Col. 4, Lines 6-53, Figure 2].

Regarding claim 26, Breitenbach et al. disclose the cable **3** is of the type that comprises an inner layer **7**, arranged nearest the conductor **5**, with an electrical conductivity that is lower than the electrical conductivity of the conductor but sufficient to cause this inner layer to act in a potential-equalizing manner to equalize the electric field externally of this inner layer, and wherein the screen layer **10** has an electrical conductivity that is higher than that of the insulating layer **8** to render the screen layer capable of functioning in a potential-equalizing manner,

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through connection to ground, and to essentially enclose the electric field that arises inside the screen layer as a result of the electric conductor [Col. 3, Lines 50-60; Col. 4, Lines 43-60, Figure 2].

Regarding claim 29, Goldstein discloses at least one inductor L1 comprises a winding [Col. 7, Lines 35-45, Figure 1].

Regarding claims 30 and 31, Kauferle et al. discloses the inductor is provided with an auxiliary winding for delivering auxiliary energy to a consumer, such as equipment for operation of parts of the installation and communication between such parts and / or between the installation and external equipment [Col. 2, Lines 58-68, Figure 1].

Regarding claims 33 and 34, Kauferle et al. discloses the ac voltage line exhibits three phases with a cable for each phase connected to a separate inductor winding in a respective phase leg of a common core [Col. 3, Lines 38-46].

With respect to claims 38-40, Kauferle et al. disclose the claimed invention except for the claimed distance between the switchgears.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to alter the distance between the switchgears and inductors since applicant has not disclosed that a distance of 25 km , lesser or larger solves any stated problem or is for

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any particular purpose and it appears that the invention would perform equally well with the switchgears being separated as shown by Kauferle et al.

Regarding claim 42, Kauferle et al. discloses the dimensioning of the inductor and the distance between adjacent inductors and between the inductor and a switchgear unit respectively, are adapted to the magnitude of the voltage the cable is intended to carry and the shunt capacitance /unit of length of the cable to essentially eliminate capacitive currents in the cable.

2. Claims 25, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kauferle et al. in view of Breitenbach et al. as applied in claim 1 above, and further in view of Kawasaki [5716574].

Kauferle et al. in view of Breitenbach et al. disclose the instant claimed invention above except for the an insulating layer of cross-linked polyethylene.

Kawasaki discloses an insulating layer of cross-linked polyethylene [Col. 6, Lines 50-55].

It would have been obvious to one having ordinary skill in the art at the time of the invention to use the insulating layer of cross-linked polyethylene as taught by Kawasaki to the cable of Breitenbach et al.

The motivation would have been to produce a high quality cable [Col. 5, Lines 20-27] and [Col. 6, Lines 52-55].

Regarding claim 35 and 36, Kauferle et al. in view of Breitenbach et al. disclose the instant claimed invention above except for the cable is designed to have a system voltage of between 50 kv and 500 kv / 30 kv and 300kv, between the conductor and the screen layer.

Kawasaki discloses a cable designed to have a system voltage of between 50 kv and 500 kv/ 30 kv and 300kv, between the conductor and the screen layer [Col. 8, Lines 42-47].

It would have been obvious to one having ordinary skill in the art at the time of the invention use the cable as taught by Kawasaki that has a system voltage between 30 kv to 300 kv to the structure of Kauferle et al. in view of Breitenbach et al.

The motivation would have been to ensure excellent electrical and mechanical properties of the cable at 30-300 kv system voltage.

3. Claim 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kauferle et al. in view of Breitenbach and Goldstein as applied in claim 19 above, and further in view of [JP 06261456].

Kauferle et al. in view of Breitenbach et al. disclose the instant claimed invention above except for the inductor is completely or partially buried in the ground.

[JP 06261456] discloses the inductor is completely or partially buried in the ground [Abstract].

It would have been obvious to one having ordinary skill in the art at the time of the invention to have the inductor completely or partially buried in the ground as taught by [JP 06261456] to the structure of Kauferle et al. in view of Breitenbach et al.

The motivation would have been for safety concern.

Regarding claim 28, Kauferle et al. in view of Breitenbach and Goldstein disclose the instant claimed invention above except for the cable, at the inductor, is divided into a cable part on both sides of the point of connection to the cable, wherein the installation comprises means for connection of the inductor to the cable comprising three connection devices for connection of an end of the electric conductor of each cable part to a respective such device and an end of the inductor to the third device, and a member for electrically interconnecting the three devices.

[JP 06261456] discloses the cable, at the inductor, is divided into a cable part on both sides of the point of connection 7 to the cable, wherein the installation comprises means for connection of the inductor to the cable comprising three connection devices for connection of an end of the electric conductor of each cable part to a respective such device and an end of the inductor to the third device 2, and a member for electrically interconnecting the three devices [see Figure and Abstract].

It would have been obvious to one having ordinary skill in the art at the time of the invention to use means for connection of the inductor to the cable comprising three connection devices as taught by [JP 06261456] to the structure of Kauferle et al. in view of Breitenbach and Goldstein.

The motivation would have been to increase stability of the system [Abstract].

4. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kauferle et al. in view of Breitenbach and Goldstein as applied in claim 19 above, and further in view of Johansen [EP 0825465].

Kauferle et al. in view of Breitenbach et al. disclose the instant claimed invention above except for an optical fiber laid along the cable or integrated into the cable, for use of a device for protection of the installation and/or commercial communication within the installation and/or with the surrounding.

Johansen discloses an optical fiber, laid along the cable or integrated into the cable, for use of a device for protection of the installation and/or commercial communication within the installation and/or with the surrounding [Abstract].

It would have been obvious to one having ordinary skill in the art at the time of the invention have an optical fiber, laid along the cable or integrated into the cable, for use of a device for protection of the installation and/or commercial communication as taught by Johansen to the installation of Kauferle et al. in view of Breitenbach and Goldstein.

The motivation would have been to be able to establish communication to a remote device in the installation [Abstract].

5. Claims 37 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kauferle et al. in view of Breitenbach and Goldstein as applied in claim 19 above, and further in view of Ainsworth [6441712].

Kauferle et al. in view of Breitenbach et al. disclose the instant claimed invention above except for the installation is designed for a maximum transmissible power, via the ac voltage line of 50 MW-600 MW and the inductor for a reactive power of 5-30 MVAR.

Ainsworth discloses the installation is designed for a maximum transmissible

power, via the ac voltage line of 50 MW-600 MW and the inductor for a reactive power of 5-30 MVAR [Col. 3, Lines 52-54; Col. 4, Lines 46-52].

It would have been obvious to one having ordinary skill in the art at the time of the invention to use the installation and the inductor as taught by Ainsworth to the structure of Kauferle et al. in view of Breitenbach and Goldstein.

The motivation would have been to ensure excellent electrical performance of the system.

Response to Argument

Applicant's arguments with respect to claims **** have been considered but are not persuasive.

With regards to claim 19, Applicant argues that Kauferle (Kauferle et al.) taken alone or in combination with Breitenbach and Goldstein does not suggest a reactive element integrated into a transmission line. Applicant also indicates that Kauferle states, "arrangements connectable directly to the line are unable to fully limit over-voltages during start-up conditions."

Kauferle talks about the background of his invention. The disadvantages of reactive compensators made before his. Even with the prior art that Kauferle was quoted above, it clearly says that the arrangements (reactive compensators) are directly connected to the line of transmission.

Additionally, Kauferle, as quoted by Applicant, states, that an object of the invention is to provide "an improved reactive power compensator which avoids the above-mentioned disadvantages." This means that Kauferle has an improved reactive power compensator integrated with the transmission line.

Applicant further argues that Kauferle also describe at col. 2, lines 58-66, that the main reactive element is not integrated since "excitation for the element ***b*** is not obtained directly from the line ***f*** or from a conventional distribution transformer connected to such line as in prior designs; instead, such excitation is provided by a high-voltage variable shunt reactance ***A*** having an exciting winding ***a*** connected in shunt with the line ***f*** at the junction ***d***. A power winding ***a'*** of the shunt reactance is magnetically coupled to the exciting winding ***a*** and serves as the power feed for the element ***b***". Kauferle also does not suggest an extruded cable. In fact, the specification of Kauferle does not include the word "cable" or "extruded cable". Rather, Kauferle et al. suggests a transmission line. The Examiner disagrees.

Even if the excitation for the element ***b*** is not obtained directly from the line ***f*** or from a conventional distribution transformer connected to such line, reactive element ***b*** is integrated with the transmission line. The reactive power of element ***b***, as disclosed in Col. 2, Lines 41-46, is adjustable in accordance with an error signal from a control circuit ***e*** to maintain the voltage at junction ***d***.

Moreover, Kauferle, according to the Applicant, does not suggest the problem of capacitive currents generated in transmission lines, Page 8, bottom lines. Examiner disagrees.

Kauferle on column 2, lines 1-5, discloses capacitor connected in parallel with exciting winding of shunt reactance. This is much like what the Applicant has in schematic diagram of Figure 4 of the Application.

Applicant argues about Kauferle not disclosing an extruded cable.

Breitenbach et al., combined with Kauferle, disclose an extruded cable **3** with an inner electric conductor **5**, an insulating layer **8** of a solid material surrounding conductor **5**, and an outer screen layer **10** located at ground potential [Col. 4, Lines 6-53, Figure 2].

An extruded cable that is very firmly attached to the conductor. This firm seat is beneficial in that the conductive layers together with the insulation layer are so firmly seated on the main conductor that displacement of this layers are impossible during mounting of fittings [Col. 2, Lines 21-27].

Applicant also argues that one skilled in the art of long power transmission lines including an extruded cable and reactive power compensators would not look for a solution to adjust the reactance of power transmission lines among documents concerning coaxial cables and the like which carry television signals from antenna systems. Such television signals only have a voltage level of a few volts and a coaxial cable is a cable used for transmission of electronic signals.

Goldstein simply discloses a housing that serve as an enclosure for reactive components for a better handling of grounding system.

Applicant argues that reference Kawasaki does not have motivation or suggestion to combine with Breitenbach.

Kawasaki discloses using cross-linked polyethylene on extruded cable that would be an important improvement to the extruded cable of Breitenbach to produce a high quality cable [Col. 5, Lines 20-27] and [Col. 6, Lines 52-55].

Applicant argues that Japanese patent document JP06-261456 does not suggest a motivation to be combined with Kauferle, Breitenbach and Goldstein.

The motivation would have been for safety concern in power transmission.

Applicant argues that Johansen does not suggest a motivation to be combined with Kauferle, Breitenbach and Goldstein.

The motivation to combine Johansen with the structure of Kauferle, Breitenbach and Goldstein would have been to be able to establish communication to a remote device in the installation [Abstract].

Applicant argues that Ainsworth does not suggest a motivation to be combined with Kauferle, Breitenbach and Goldstein.

Ainsworth discloses the installation is designed for a maximum transmissible power, via the ac voltage line of 50 MW-600 MW and the inductor for a reactive power of 5-30 MVAR [Col. 3, Lines 52-54; Col. 4, Lines 46-52].

Conclusion

The applicant's amendment has been fully considered. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

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1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joselito Baisa whose telephone number is (571) 272-7132. The examiner can normally be reached on M-F 5:30 am to 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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